Diving in: bringing to light the lost cities of Egypt

Damian Robinson

How do you investigate a drowned landscape? How do you find the archaeological remains of buildings and cities that were once famous throughout the ancient world? How do you come to know the people who lived, worked, and worshipped in them? How do you understand the complex geological processes that led to their ultimate destruction? These were the sorts of questions that faced maritime archaeologist Franck Goddio as he sailed his catamaran Kaimiloa into the Great Port (Portus Magnus) in Alexandria in 1992 at the beginning of his project on the lost cities of the Canopic region of Egypt. Damian Robinson here offers some of the answers.

airman and an Egyptian prince

The presence of archaeological remains beneath the waters of the Bay of Aboukir off Alexandria in Egypt had been known since the pioneering activities of Prince Omar Toussoun. In 1933, following a tip-off from a British airman who had spotted the remains of buildings in the bay, Prince Omar hired a professional diver and organized the salvage of several important pieces of statuary from the seabed. At this time, however, scientific archaeology underwater was very much in its infancy, and while it was possible to suggest that there was archaeology beneath the bay, the Prince could get little further with his understanding of this drowned landscape. For that, the archaeological world would have to wait another sixty years for the methods and techniques of underwater archaeology to catch up with scholarly curiosity.

Before Franck Goddio even set sail for Egypt to embark upon his new collaborative project with Egypt's Supreme Council of Antiquities on the lost cities, the process of gathering all of the necessary background information had begun. Painstaking hours of documentary research in archives and libraries had already led him to some important conclusions. For Alexandria, a detailed study of the ancient descriptions of the Great Port and its buildings, coupled with a thorough understanding of the local topography and the layout of the known archaeological remains, brought Franck to a remarkable conclusion: that large parts of the ancient port, which contained significant elements of the royal palace complex of the Ptolemies, now lay under water in the Great Harbour. Literary accounts of some of the lost Egyptian cities, such as Herakleion and Thonis, also threw up some tantalizing clues concerning their potential whereabouts. For both Alexandria and the lost cities in the Bay of Aboukir, the issue was no longer whether there were important archaeological remains under water, but how they could be found.

Investigating a submerged landscape

The first step in the new project was to make a detailed topographical study of the submerged landscapes in conjunction with a geological exploration. The aim was to understand how the region had become submerged and just how much of the seabed had once been land. In order to map the sea floor, a survey was undertaken over 42 square miles of the western part of the Bay of Aboukir and over the whole 400 hectare area of the Great Port in Alexandria. Of course, the seabed of both areas has changed since their submergence as they have been affected by seismic and other geological processes, extensive sedimentation and the actions of the currents, swell and waves. Nevertheless, by using different surveying instruments and considering their complementary results, it was possible to understand the ancient topography of these submerged land surfaces.

From here, areas of archaeological potential could begin to be explored through test excavations. In the Bay of Aboukir Franck and his team used the results from the survey, together with descriptions of the sites of ancient cities in Strabo's *Geography* to refine their search and highlight areas for test excavation. They systematically removed the overlying sediments using airlifts (a device rather like an underwater vacuum cleaner) to reveal and document with photographs, drawings, and written notes any underlying archaeological remains. Little by little, the excavations began to reveal the topography of the site. In a site as complicated as a submerged port, the artefacts found during the excavations were particularly helpful in understanding the topography of the site; put simply, finds of anchors and ship wrecks indicated that the excavation was taking place in a watery area, whereas the ruins of buildings would suggest an area that was once dry land.

Can anyone tell me where we are? Making the artefacts talk

It is one thing finding and excavating an ancient city under water, but another working out exactly which ancient city you are working in. Although our ancient sources clearly give names and locations for the now submerged cities, these sources are contradictory and confusing. The ancient geographer, Strabo, for example says that 'East of Canopus is the city of Herakleion with a sanctuary to Herakles, then comes the Canopic mouth of the Nile … in ancient times a city named Thonis was existing in that area'. So, which were we exploring? Herakleion or Thonis? Fortunately, the excavated artefacts can unambiguously reveal the answer.

The first piece of evidence came with the find of a pink granite *naos*. A *naos* is a shrine in which a statue of an Egyptian god resided and importantly this particular *naos* contained an inscription dedicating it to the temple of Amon-gereb. From another inscription on the Stele of Nektanebo I, which was found in the Greek trading settlement of Naukratis further down the Canopic branch of the Nile, we learn that the temple of Amon-gereb was located in the city of Herakleion. Consequently, it was likely

that the team was excavating in this city, which from the ancient sources and the inscription we also learn functioned as a kind of customs post and trading post for Greek traders in the western part of the Nile Delta.

By enormous coincidence almost the exact twin of the Naukratis stele was also found in the excavations in Herakleion, with a virtually identical inscription. The details (and differences) of the two inscriptions led the excavators to conclude that the cities of Herakleion and Thonis were in fact one and the same city, with Thonis the original Egyptian name of the settlement in which a sanctuary to Herakles was founded and which led to it becoming known as Herakleion by its Greek population. Together the artefacts and their inscriptions speak of a vibrant trading community of Egyptians and foreigners living and working at the mouth of the 'Sea of the Greeks' in the third century B.C.

Not waving, but drowning

Something clearly went badly wrong on the Canopic coast for large parts of the Great Harbour of Alexandria, as well as two or three ancient cities and countless smaller villages and their inhabitants to have disappeared into the sea; but what caused this and when did it happen?

A team of geologists, from the Smithsonian Institute in Washington DC and Stanford University, worked in conjunction with the survey team and demonstrated that throughout antiquity the land at the edge of the Nile Delta had been gradually subsiding into the Mediterranean. Such natural subsidence, however, was insufficient to explain the depth at which the archaeological remains were found. In the data provided by the team's geophysical survey instruments, as well as in the sediments from the boreholes, indications of cataclysmic geological events were observed in which the sediments on which the cities were built literally turned to water, with disastrous consequences. Such events were probably triggered by additional pressure on the unstable soils of the Delta from periods of exceptionally high Nile floods, tsunamis, or earthquakes. It became clear that the end for the Canopic cities of the Delta and also for much of the Portus Magnus was both dramatic and devastating. But when did this happen? For that we have to turn back to the recovered artefacts from the archaeological excavations and in particular to the coins. Crucially the last coins found in both Alexandria and the Canopic cities date to the middle of the 8th century A.D., suggesting a date for the devastating decline.

Preserving the finds

For most archaeological artefacts, burial at sea in thick sediments can help to preserve them from decay, but the processes of excavating and raising them from the seabed can have disastrous consequences. If left untreated, archaeological wood can shrink, crack and disintegrate as it dries out and even materials as hardy as stone and pottery can crack, and shatter as salts from the seawater crystallize when the artefact dries. Consequently, all of the remains removed from the seabed undergo a series of conservation and preservation treatments on board the excavation's research vessel, the Princess Duda, and where necessary in a dedicated conservation laboratory in Alexandria. The work of conservation can be as simple as placing robust ceramics into fresh water to remove the salts from the sea water or as complicated as restoring a corroded metal bowl so that it can be displayed in a museum.

The archaeological work on the cities does not end when the diving team leave Egypt; this is only the start. There is also an additional team of specialist researchers at the European Institute for Underwater Archaeology in Paris, the University of Oxford in the UK and elsewhere, who are studying every aspect of the project, from the excavated artefacts – the coins, ceramics, metalwork, sculpture, anchors, ship remains etc. – to the topography of the sites and their development. Together the excavation and post-excavation teams are working for two simple reasons: to better understand the lives of the people who worked and worshipped in the Portus Magnus or the Canopic cities and to share this knowledge with the wider world.

Damian Robinson is Director of the Oxford Centre for Maritime Archaeology. To find out more about maritime archaeology and these projects you might like to look at http://www.franckgoddio.org/